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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/582,368	<b>Applicant(s)</b> KESSELL ET AL.	
	<b>Examiner</b> ERNST ARNOLD	<b>Art Unit</b> 1613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2011.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 5) ☒ Claim(s) 1-11, 13-18 and 20 is/are pending in the application.
- 5a) Of the above claim(s) 10 is/are withdrawn from consideration.
- 6) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 7) ☒ Claim(s) 1-9, 11, 13-18 and 20 is/are rejected.
- 8) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

### DETAILED ACTION

Claim 10 is withdrawn. Claims 12, 19 and 21 have been cancelled. Claims 1-9, 11, 13-18 and 20 are pending and under examination. This Action is FINAL.

#### **Withdrawn rejections:**

Applicant's amendments and arguments filed 11/30/11 are acknowledged and have been fully considered. Any rejection and/or objection not specifically addressed below is herein withdrawn.

The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set of rejections and/or objections presently being applied to the instant application.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

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3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-9, 11, 13-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kessell (WO 00/71623 which is equivalent to US 2002/054999 filed on IDS 5/20/10) and Flick (Cosmetic and Toiletry Formulations 2001, 2<sup>nd</sup> Edition Volume 8; page 285).

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

#### Applicant claims:

1. (Currently Amended) A dispersion comprising particles of metal oxide dispersed in:
  - a) a siloxane fluid; and
  - b) 1 to 60% of a dispersing agent, based on the weight of the metal oxide particles, comprising a mixture of polysiloxane molecules;wherein the mixture of polysiloxane molecules comprises:
  - (i) an average of from 0.1 to 3 carboxyl groups per molecule; and
  - (ii) the ratio of non-carboxyl group containing monomer units to carboxyl group containing monomer units in the polysiloxane molecules is in the range from 40 to 150:1.

**Determination of the scope and content of the prior art**

**(MPEP 2141.01)**

Kessel teaches a dispersion of metal oxide having an average particle size of less than 200 nm dispersed in a dispersing siloxane fluid medium wherein the metal oxide particles can be titanium or zinc oxide (claims 1 and 3). The particle size can be in the range of 30 to 100 nm (claim 5). **Sunscreen formulations** with a mixture of siloxanes is taught (page 10) and shown below:

**Phase A**

Cyclomethicone and trimethylsiloxysilicate (Dow Corning 749 Fluid)	7.5
Dimethicone (Dow Corning 200 Fluid)	7.5
Cyclomethicone and dimethicone copolyol (Dow Corning 3225c Formulation Aid)	10.0
Titanium dioxide dispersion produced above	15.0

**Phase B**

Glycerin	4.0
Sodium Chloride	1.0
Purified water/aqua	54.5
Preservative	0.5

Kessel teaches that the amount of metal oxide can be from 0.5 to 30 wt% of the composition and the dispersion contains at least 40 wt% particles of metal oxide (page 4, lines 20-21 and page 7, lines 26-28). Kessel teaches that the metal oxide will have an extinction coefficient for light in the visible range of wavelengths no greater than 10 litres

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per gram per cm (page 6, lines 5-8). Kessel teaches that any suitable siloxane fluid can be used and teaches the use of polydimethylsiloxane and substituted polydimethylsiloxanes as well as alternative fluids such as dimethylsiloxane linear oligomers or polymers such as phenyltrimethicone for use in the composition (page 4, lines 4-6 and 22-27). Kessel teaches that the dispersion consists essentially of the ingredients (particles of metal oxide, siloxane fluid dispersing medium and dispersing agent (page 5, lines 23-25). Kessel teaches that the metal oxide particles are treated with water repellant materials and are therefore hydrophobic (page 4, lines 1-15 and claim 7).

Flick teaches the use of Monasil PCA in combination with titanium dioxide in sun compositions reproduced below for Applicant's benefit (page 285). The Examiner notes that Applicant also teaches Monasil PCA as a polysiloxane containing a carboxyl group which must intrinsically meet the limitations of instant claim 1 (see page 9, example 1 of the instant specification).

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After Sun Soother with Aloe Vera

A refreshing creamy lotion which soothes, cools and moisturizes sun-dried skin.

Ingredients:

	<u>Wt%</u>
A. Water	86.23
Phospholipid SV	3.0
Propylene Glycol	2.0
B. Monafax MAP 160	1.0
Cetyl Alcohol	2.0
Hexyl Laurate	1.0
Monasil FCA	2.0
C. AMP (95%)	0.35
D. Titanium Dioxide	0.4
E. Aloe Vera Gel 1:1	2.0

Procedure:

Combine Part A while heating to 70C. Separately, mix Part B while heating to 70C. Add Part B to Part A slowly with rapid agitation. Add Part C. Add Part D, homogenize, cool to 50C. Add aloe vera, color, fragrance and preservative. Package.

Typical Properties:

Appearance: White flowable lotion  
Viscosity: 23,400 cP  
pH: 6.1  
Formula F-836

**Ascertainment of the difference between the prior art and the claims****(MPEP 2141.02)**

1. The difference between the instant application and Kessel is that Kessel do not expressly teach a dispersing agent which is a mixture of polysiloxane molecules has a molecular weight in the range from 4000 to 15000 and has a number of carboxyl groups per molecule (0.1 to 3 or 0.8 to 2.5) or the number of non-carboxyl group containing monomer units (40 to 150:1) or from 30 to 200 as instantly claimed. This deficiency in Kessel is cured by the teachings of Flick.

2. The difference between the instant application and Kessel is that Kessel do not expressly teach a viscosity in the range from 0.2 to 10 Pa.s.; or the polysiloxane.

3. The difference between the instant application and Kessel is that Kessel do not expressly teach a composition that consists of metal oxide, siloxane fluid and dispersing agent of claim 1.

### **Finding of prima facie obviousness**

#### **Rational and Motivation (MPEP 2142-2143)**

1. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to make the composition of Kessel which is a mixture of polysiloxane molecules with the number of carboxyl groups per molecule (0.1 to 3 or 0.8 to 2.5) or the number of non-carboxyl group containing monomer units (40 to 150:1) or from 30 to 200 of instant claims 1, 8 and 9, produce the instant invention.

One of ordinary skill in the art would have been motivated to do this because Kessel clearly teaches that any siloxane can be used with the only requirement being cosmetic acceptability and Flick teaches Monasil PCA for application to the skin which would be cosmetically acceptable. Applicant teaches Monasil PCA has carboxyl groups and must intrinsically have the instantly claimed limitations otherwise there would be an enablement problem. Therefore: "It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art."



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*In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). Furthermore, addition of the Monasil PCA would intrinsically have more than 1 molecule present and thus read on a mixture of molecules in the absence of evidence to the contrary.

2. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to make the composition of Kessel with a viscosity in the range from 0.2 to 10 Pa.s. and produce the instant invention.

One of ordinary skill in the art would have been motivated to do this because obviously the composition of Kessel has some degree of viscosity but that value was not disclosed. The viscosity of a composition is clearly a result effective parameter that a person of ordinary skill in the art would routinely optimize. Optimization of parameters is a routine practice that would be obvious for a person of ordinary skill in the art to employ. It would have been customary for an artisan of ordinary skill to determine the optimal amount of each ingredient needed to achieve the desired viscosity. Thus, absent some demonstration of unexpected results from the claimed parameters, the optimization of the viscosity would have been obvious at the time of applicant's invention.

3. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to make the composition of Kessel with composition that consists of metal oxide, siloxane fluid and dispersing agent of claim 1 and produce the instant invention.

One of ordinary skill in the art would have been motivated to do this because Kessel already sets forth the concept of a composition with just metal oxide particles,

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siloxane medium and dispersing agent. Flick establishes Monasil PCA in sun compositions. It is thus no stretch of the imagination by the ordinary artisan to combine the compositions to arrive at the instant invention.

The U.S. Patent Office is not equipped with analytical instruments to test prior art compositions for the infinite number of ways that a subsequent applicant may present previously unmeasured characteristics such as the viscosity of the final sunscreen composition.

In light of the forgoing discussion, the Examiner concludes that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a).

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

**Response to arguments:**

Applicant makes the interesting assertion that at best Flick suggests a composition that includes 2% by weight of the total composition of a dispersing agent which corresponds to about 400% with respect to the weight of the titanium dioxide particles which are present at 0.4 wt%. Applicant concludes that Flick does not cure the deficiency in Kessell for the limitation of having 1 to 60% of the dispersing agent based on the weight of the metal oxide particles. Respectfully, the Examiner cannot agree

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because the Examiner based the rejection on the fact that Flick taught using 2% by weight of the composition of the dispersing agent which means the ordinary artisan would be motivated to add 2% by weight of the composition of the dispersing agent of Flick to the composition of Kessell. Since the composition of Kessell has 15% by weight titanium oxide dispersion, which contains 41% by weight of the composition  $\text{TiO}_2$  (see page 9, line 5), which means that in the 15% by weight of the titanium oxide dispersion there is 6.5% by weight of  $\text{TiO}_2$   $[(0.41 \times 15\%) = 6.5\%]$ . Consequently, the ordinary artisan would add the 2% by weight of the composition of the dispersing agent of Flick, which is  $2/6.5 \times 100 = 30.7\%$  by weight with respect to the weight of the titanium dioxide particles in the composition of Kessel and reads on the instant claims. The Examiner reminds Applicant that this is but one embodiment of Kessel because Kessel teaches that the dispersion can contain at least 40% by weight of particles of metal oxide and the dispersing agent is present in the range of 15 to 40% by weight based on the particles of metal oxide (page 4, lines 20-21 and claim 14). Thus it is really just a routine optimization function by the ordinary artisan to determine how much dispersing agent relative to the weight of the metal oxide particles is present absent unexpected results. The principle of law states from MPEP 2144.05: Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

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Respectfully, Applicant's arguments are not persuasive and the claims remain rejected.

### ***Conclusion***

No claims are allowed.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERNST V. ARNOLD whose telephone number is (571)272-8509. The examiner can normally be reached on M-F 7:15-4:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brain Kwon can be reached on 571-272-0581. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ernst V Arnold/  
Primary Examiner, Art Unit 1613